

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1.-40. (Canceled)

41. (New) A screening method for a candidate of a substance having a feeding suppressive activity or blood sugar level suppressive activity, which comprises
providing a screening system comprising a lipid bilayer membrane comprising (a) a polypeptide consisting of an amino acid sequence of SEQ ID NO: 2 or an ortholog thereof and (b) a G protein α subunit belonging to the Gs family, wherein the C-terminus of the polypeptide optionally can be ligated to the N-terminus of the G protein α subunit,
adding a labeled GTP analog in the presence of a test substance in the screening system,
and
comparing an amount of the label bound with the G protein α subunit in the presence of the test substance with an amount of the label bound with the G protein α subunit in the absence of the test substance,
whereby an increase in the amount of the label bound with the G protein α subunit in the presence of the test substance as compared to the amount of the label bound with the G protein α subunit in the absence of the test substance is indicative of a candidate of a substance having a feeding suppressive activity or blood sugar level suppressive activity.

42. (New) The method of claim 41, wherein the substance is a therapeutic for diabetes, obesity, hyperlipidemia, or hyperuremia.

43. (New) A screening method for a candidate of a substance having a feeding promoting activity, which comprises
providing a screening system comprising a lipid bilayer membrane comprising (a) a polypeptide consisting of an amino acid sequence of SEQ ID NO: 2 or an ortholog thereof and (b) a G protein α subunit belonging to the Gs family, wherein the C-terminus of the polypeptide optionally can be ligated to the N-terminus of the G protein α subunit,
adding a labeled GTP analog in the presence of a test substance in the screening system,
and
comparing an amount of the label bound with the G protein α subunit in the presence of

the test substance with an amount of the label bound with the G protein α subunit in the absence of the test substance

whereby a decrease in the amount of the label bound with the G protein α subunit in the presence of the test substance as compared to the amount of the label bound with the G protein α subunit in the absence of the test substance is indicative of a candidate of a substance having a feeding promoting activity.

44. (New) The method of claim 43, wherein the substance is a therapeutic for cibophobia.

45. (New) A screening method for a candidate of a substance having a feeding suppressive activity or blood sugar level suppressive activity, which comprises

providing a screening system comprising a lipid bilayer membrane comprising (a) a polypeptide consisting of an amino acid sequence of SEQ ID NO: 2 or an ortholog thereof, (b) a G protein α subunit belonging to the Gs family, wherein the C-terminus of the polypeptide optionally can be ligated to the N-terminus of the G protein α subunit, and (c) adenylate cyclase, adding a test substance to the screening system, and

comparing adenylate cyclase activity in the presence of a test substance in the screening system with adenylate cyclase activity in the absence of a test substance in the screening system,

whereby an increase in adenylate cyclase activity in the presence of the test substance as compared to adenylate cyclase activity in the absence of the test substance is indicative of a candidate of a substance having a feeding suppressive activity or blood sugar level suppressive activity.

46. (New) The method of claim 45, wherein the substance is a therapeutic for diabetes, obesity, hyperlipidemia, or hyperuremia.

47. A screening method for a candidate of a substance having a feeding suppressive activity or blood sugar level suppressive activity, which comprises

providing a screening system comprising a lipid bilayer membrane comprising (a) a polypeptide consisting of an amino acid sequence of SEQ ID NO: 2 or an ortholog thereof, (b) a G protein α subunit belonging to the Gi family, wherein about 5 amino acids of the G protein α subunit are replaced with that of a G protein α subunit belonging to the Gs family, and wherein the C-terminus of the polypeptide optionally can be ligated to the N-terminus of the G protein α

subunit, and (c) adenylate cyclase,

adding a test substance to the screening system, and

comparing adenylate cyclase activity in the presence of a test substance in the screening system with adenylate cyclase activity in the absence of a test substance in the screening system,

whereby a decrease in adenylate cyclase activity in the presence of the test substance as compared to adenylate cyclase activity in the absence of the test substance is indicative of a candidate of a substance having a feeding suppressive activity or blood sugar level suppressive activity.

48. (New) The method of claim 47, wherein the substance is a therapeutic for diabetes, obesity, hyperlipidemia, or hyperuremia.

49. A screening method for a candidate of a substance having a feeding suppressive activity or blood sugar level suppressive activity, which comprises

providing a screening system comprising a lipid bilayer membrane comprising (a) a polypeptide consisting of an amino acid sequence of SEQ ID NO: 2 or an ortholog thereof, (b) a G protein α subunit belonging to the Gq family, wherein about 5 amino acids of the G protein α subunit are replaced with that of a G protein α subunit belonging to the Gs family, and wherein the C-terminus of the polypeptide optionally can be ligated to the N-terminus of the G protein α subunit, and (c) phospholipase C,

adding a test substance to the screening system, and

comparing phospholipase C activity in the presence of a test substance in the screening system with phospholipase C activity in the absence of a test substance in the screening system,

whereby an increase in phospholipase C activity in the presence of the test substance as compared to phospholipase C activity in the absence of the test substance is indicative of a candidate of a substance having a feeding suppressive activity or blood sugar level suppressive activity.

50. (New) The method of claim 49, wherein the substance is a therapeutic for diabetes, obesity, hyperlipidemia, or hyperuremia.

51. (New) A screening method for a candidate of a substance having a feeding promoting activity, which comprises

providing a screening system comprising a lipid bilayer membrane comprising (a) a

polypeptide consisting of an amino acid sequence of SEQ ID NO: 2 or an ortholog thereof, (b) a G protein α subunit belonging to the Gs family, wherein the C-terminus of the polypeptide optionally can be ligated to the N-terminus of the G protein α subunit, and (c) adenylate cyclase, adding a test substance to the screening system, and comparing adenylate cyclase activity in the presence of a test substance in the screening system with adenylate cyclase activity in the absence of a test substance in the screening system, whereby a decrease in adenylate cyclase activity in the presence of a test substance in the screening system as compared to adenylate cyclase activity in the absence of a test substance in the screening system is indicative of a candidate of a substance having a feeding promoting activity.

52. (New) The method of claim 51, wherein the substance is a therapeutic for cibophobia.

53. (New) A screening method for a candidate of a substance having a feeding promoting activity, which comprises

providing a screening system comprising a lipid bilayer membrane comprising (a) a polypeptide consisting of an amino acid sequence of SEQ ID NO: 2 or an ortholog thereof, (b) a G protein α subunit belonging to the Gi family, wherein about 5 amino acids of the G protein α subunit are replaced with that of a G protein α subunit belonging to the Gs family, and wherein the C-terminus of the polypeptide optionally can be ligated to the N-terminus of the G protein α subunit, and (c) adenylate cyclase,

adding a test substance to the screening system, and

comparing adenylate cyclase activity in the presence of a test substance in the screening system with adenylate cyclase activity in the absence of a test substance in the screening system,

whereby an increase in adenylate cyclase activity in the presence of a test substance in the screening system as compared to adenylate cyclase activity in the absence of a test substance in the screening system is indicative of a candidate of a substance having a feeding promoting activity.

54. (New) The method of claim 53, wherein the substance is a therapeutic for cibophobia.

55. (New) A screening method for a candidate of a substance having a feeding promoting activity, which comprises

providing a screening system comprising a lipid bilayer membrane comprising (a) a polypeptide consisting of an amino acid sequence of SEQ ID NO: 2 or an ortholog thereof, (b) a G protein α subunit belonging to the Gq family, wherein about 5 amino acids of the G protein α subunit are replaced with that of a G protein α subunit belonging to the Gs family, and wherein the C-terminus of the polypeptide optionally can be ligated to the N-terminus of the G protein α subunit, and (c) phospholipase C,

adding a test substance to the screening system, and

comparing phospholipase C activity in the presence of a test substance in the screening system with phospholipase C activity in the absence of a test substance in the screening system,

whereby a decrease in phospholipase C activity in the presence of the test substance as compared to phospholipase C activity in the absence of the test substance is indicative of a candidate of a substance having a feeding promoting activity.

56. (New) The method of claim 55, wherein the substance is a therapeutic for cibophobia.